

**REMARKS**

Claims 1, 2, and 11–13 are pending in this application. By this Amendment, claims 1, 12, and 13 are amended, and claims 8–10 and 4–17 are canceled. Support for the amendments to the claims may be found, for example, in the specification at page 38, line 5 to page 42, line 7. No new matter is added.

In view of the foregoing amendments and following remarks, reconsideration and allowance are respectfully requested.

**I. Allowable Subject Matter**

Applicants thank the Examiner for the indication that claim 10 contain allowable subject matter. Specifically, these claims are indicated as allowable if rewritten in independent form to include all of the features of the base claim and any intervening claims. Applicants appreciate this indication of allowability, but respectfully submit that at least claim 1, from which these claims depend, and the other claims depending from claim 1 are allowable for at least the reasons indicated below.

**II. Rejections Under 35 U.S.C. §103**

**A. Akashi in view of Ogawa**

The Office Action rejects claims 1, 2, 4–9 and 11–16 under 35 U.S.C. §103(a) as obvious over U.S. Patent No. 6,287,485 to Akashi et al. ("Akashi") as evidenced by George W. Scherer, "Gel," AccessScience@McGraw-Hill, <http://www.accessscience.com>, DOI 10.1036/1097-8542.283800, last modified: July 1, 2002 ("Scherer") in view of U.S. Patent No. 4,891,119 to Ogawa ("Ogawa"). By this Amendment, claims 8, 9 and 14–16 are canceled, rendering their rejections moot. As to the remaining claims, Applicants respectfully traverse the rejection.

Without conceding the propriety of the rejections, independent claims 1, 12, and 13 are amended to recite that "only one of the polymer compounds forms a three-dimensional

crosslinked structure." However, Akashi discloses an IPN gel, which has two or more polymers each having a three-dimensional crosslinked structure. Thus, Akashi does teach or suggest that "only one of the polymer compounds forms a three-dimensional crosslinked structure."

Scherer and Ogawa fail to cure this deficiency. Thus, Akashi, Scherer, and Ogawa, considered either separately or in combination, fail to teach or suggest each and every feature of the independent claims. Accordingly, Akashi, Scherer, and Ogawa would not have rendered obvious the claimed subject matter.

Claim 1, 12, and 13 would not have been rendered obvious by Akashi, Scherer, and Ogawa. Claims 2, 4-7, and 11 depend from claim 1 and, thus, also would not have been rendered obvious by Akashi, Scherer, and Ogawa. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

**B. Ilmain in view of Ogawa**

The Office Action rejects claims 1, 2, 4-9, and 14 under 35 U.S.C. §103(a) as obvious over Frank Ilmain et al., *Nature*, vol. 349, page 400 (1991) ("Ilmain") as evidenced by Scherer in view of Ogawa. By this Amendment, claims 8, 9 and 14 are canceled, rendering their rejections moot. As to the remaining claims, Applicants respectfully traverse the rejection.

As discussed above, by this Amendment independent claims 1, 12, and 13 are amended to recite that "only one of the polymer compounds forms a three-dimensional crosslinked structure." However, Ilmain discloses an IPN gel, which has two or more polymers each having a three-dimensional crosslinked structure. Thus, Ilmain does teach or suggest that "only one of the polymer compounds forms a three-dimensional crosslinked structure."

Scherer and Ogawa fail to cure this deficiency. Thus, Ilmain, Scherer, and Ogawa, considered either separately or in combination, fail to teach or suggest each and every feature of the independent claims. Accordingly, Ilmain, Scherer, and Ogawa would not have rendered obvious the claimed subject matter.

Claim 1, 12, and 13 would not have been rendered obvious by Ilmain, Scherer, and Ogawa. Claims 2, 4–7, and 11 depend from claim 1 and, thus, also would not have been rendered obvious by Ilmain, Scherer, and Ogawa. Accordingly, reconsideration and withdrawal of the rejection are respectfully requested.

### **III. No Motivation To Combine References**

Ogawa discloses a gel medium for electrophoresis, wherein the whole body is a bulk gel. The gel cannot expand because there is no liquid around the gel. Because there is no liquid around the gel, the gel is subject to drying out. Therefore, Ogawa discloses adding a water-soluble polymer to impart elasticity to the gel medium even if it is dried, in order to prevent the gel from becoming brittle and breaking, and to control the viscosity of the gel medium. *See* Ogawa at column 4, lines 3–11.

The Office Action asserts that one of ordinary skill in the art would have been motivated to use the water-soluble polymer of Ogawa in the optical device of Akashi or Ilmain in order to impart elasticity to the medium even when it is dried. *See* Office Action at page 6, lines 16–20. For at least the reasons previously made of record, Applicant's respectfully disagree.

While effects such as improved elasticity and lack of brittleness when dried, and controllable viscosity may be desired in the field of polyacrylamide gels for electrophoresis, such effects are not specifically desired in the field of volume-modulating materials as used in the gels disclosed by Akashi and Ilmain, that swell and shrink of by absorbing or releasing a liquid in response to an externally applied stimulus. Moreover, neither Akashi nor Ilmain

Accordingly, one of ordinary skill in the art would not have been motivated to combine Ogawa with either Akashi or Ilmain. Without the requisite motivation to combine references, it cannot be said that Akashi or Ilmain and Ogawa would have rendered obvious the subject matter of claims 1, 12, and 13.

**IV. Conclusion**

In view of the foregoing, it is respectfully submitted that this application is in condition for allowance. Favorable reconsideration and prompt allowance of the application are earnestly solicited.

Should the Examiner believe that anything further would be desirable in order to place this application in even better condition for allowance, the Examiner is invited to contact the undersigned at the telephone number set forth below.

Respectfully submitted,



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